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# WHAT IS THE BEST WAY TO RECRUIT PUBLIC SERVANTS?

ANDERS SUNDELL

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Department of Political Science  
University of Gothenburg  
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## ABSTRACT

What is the best way to recruit public servants? Governments all over the world have the last decades pondered that question, as parts of increasing attempts to reform civil services and public administrations. Two opposing alternatives can be distinguished: on one hand, traditional civil service recruitment, centralized, through formal examinations, with low discretion and flexibility for managers. On the other hand, private sector-style recruitment that is faster and more flexible, allowing managers to pick the candidates most suitable for each position.

In this paper, I test the hypothesis that the context determines which institution that will deliver the highest level of meritocracy (in the sense that skills and ability actually are the decisive factors). More specifically, when the risk for patronage is low, private sector style-recruitment can be attempted to find the best candidates, but when the risk instead is high, formal public sector style-recruitment is preferable to prevent patronage and nepotism. Analysis of a dataset containing information about the structures and characteristics of bureaucracies in over 100 countries lends support to the hypothesis.

### **Anders Sundell**

The Quality of Government Institute  
Department of Political Science  
University of Gothenburg  
anders.sundell@pol.gu.se

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## Introduction

An effective public administration that is free from corruption is necessary to implement government policies and stimulate economic and human development (Mauro 1995; Holmberg, Rothstein and Nasiritousi 2009). For this reason, international organizations such as the World Bank have increasingly emphasized civil service and administrative reform in their development programs (Evans 2008). One of the most important aspects of civil service reform is the recruitment of public servants, which has been shown to matter both for economic growth and for corruption prevention (Rauch 1995; Evans and Rauch 1999; Dahlström, Lapuente and Teorell 2012). While it is self-evident that the public sector would benefit from recruiting the best and the brightest, the way to design procedures that achieve such an outcome is less clear.

The recruitment procedure associated with traditional bureaucracies is to evaluate candidates according to formal examinations regulated by civil service laws. Proponents of the “New Public Management” have however criticized the rigidity and lack of flexibility inherent in traditional civil service recruitment practices. Many countries have therefore decentralized hiring authority and allowed managers more flexibility, bringing methods of recruitment in public sector organizations closer to those used in the private sector (Laegreid and Wise 2007).

While the New Public Management ideas now no longer are in vogue to the same extent as earlier (Dunleavy et al 2006), it is clear that recruitment practices traditionally associated with the private and public sectors have different strengths and weaknesses. The trade-off is to a large extent between a system with much discretion for recruiters which potentially is vulnerable to patronage and clientilism, and a system of rigid recruitment guided by formal examination systems which instead may fail to pick up the best talent, as formal examinations never can be optimally designed (Miller 2000).

Which one is better? The answer is probably that neither could be applied successfully to all countries and organizations. There is no “one size fits all” solution, not in recruitment, nor in any other area of public administration (see Grindle 2004; Pritchett and Woolcock 2004). This does not how-

ever mean that there are no common trends and that reformers of one system have nothing to learn from the study of other contexts. Instead, an important task for researchers must be to identify the conditions under which institutions work more or less well.

The hypothesis of this paper is that when the risk for patronage and nepotism is high, a more regulated recruitment process based on formal examinations is preferable, to “tie the hands” of recruiters. When the risk for patronage instead is low, private sector-style practices may instead provide the flexibility required to find the best candidates for each position. However, if more flexible recruitment without formal examinations is attempted when there are few other safeguards against patronage (such as a free media and an independent judiciary), the likely result is that recruiters and political parties will distribute public jobs to unqualified persons for patronage.

This hypothesis is tested on a cross-national dataset of expert evaluations of bureaucratic structures (Dahlström, Lapuente and Teorell 2011). Using an indicator of the level of meritocracy in the outcome of the recruitment process as the dependent variable, I find that several countries that to little extent use formal examinations, but have many other safeguards against patronage, exhibit some of the highest levels of meritocracy in recruitment. Countries that do not have formal examinations nor other safeguards in contrast instead show the lowest levels of meritocracy in the outcomes of the recruitment process. Countries that to a large extent rely on formal examinations are found foremost on the upper half of the meritocracy scale, regardless of the presence or absence of other safeguards against patronage. In other words, a positive effect of formal examinations on meritocracy is only found in countries with few other safeguards against patronage.

The paper proceeds as follows. In the theoretical section, I describe the role of patronage in recruitment and how formal competitive examinations relate to meritocracy. I then proceed to discuss factors affecting the incentives to engage in patronage, and the factors that discourage it. In the subsequent section, data and methods are described. Results are then presented, and the robustness of the empirical findings are tested. The final section concludes the paper.

## Theory

Let me introduce the theoretical section by posing a question: why is patronage much more widespread in Nicaragua than in New Zealand? In the data (presented in the data and methods section), Nicaragua and New Zealand emerge as the two countries where formal examinations are used to the least extent in the recruitment process. However, they can be found on the exact opposite ends of the scale for meritocracy in the outcomes of the recruitment process. In Nicaragua, the skills and experience of applicants to jobs in the public sector play a small role.

Instead, “entry into public administration and career progress are strongly influenced by political or clientilistic criteria //...// because no regulatory framework governs these processes” (Echebarría and Cortázar 2007:151).

In New Zealand, skills and merits of the applicants mattered more for recruitment than in any other country except Hong Kong. But the explanation is apparently not a strict framework for recruitment, rather, New Zealand is usually described as the country where New Public Management reforms have gone furthest (Christensen and Laegreid 2011). Hiring is highly decentralized: the official jobs portal of New Zealand states that “Each State sector organisation advertises for and appoints its own staff below the position of chief executive, according to its needs. All vacancies must be advertised and appointments made on the basis of the impartial selection of suitably qualified people. The application process //...// can vary between organisations.” (New Zealand Government Jobs Online 2012).

In both countries, there is little centralization and regulation regarding the process of recruitment to the public sector. The outcomes of the processes are however radically different. In Nicaragua, patronage and clientilism prevail, while New Zealand enjoys a high level of meritocracy, where each government organization is able to recruit the candidates best suited for its needs. The intuitive explanation for why that is case is that the risk that politicians and bureaucrats will engage in patronage is much lower in New Zealand than in Nicaragua. The answer as to why that in turn is the case is probably not that New Zealanders generally are better people or that Nicaraguans are inherently corrupt, but because of the quality of institutions and viability of the democratic culture in New Zealand, that safeguard against patronage. More flexible regulation and less formalization of

the recruitment process can in that context be allowed.<sup>1</sup> In the following, I first provide an overview of patronage and formal examinations in recruitment, and then proceed with an attempt to operationalize (some of) the factors that relate to the risk for patronage in a country.

## Patronage and formal examinations

Historically, strict meritocratic recruitment to public offices has been a rare phenomena. Mann (1993:445-446) outlines four alternative ways of obtaining an office: through heritage, election, purchase or patronage. Only in the 19<sup>th</sup> and 20<sup>th</sup> centuries did meritocratic recruitment increase in importance in the “western world”, but in China tests on knowledge of classical texts for prospective bureaucrats were held as early as 134 B.C. (Elman 2000).<sup>2</sup>

Patronage has instead been a very common method of appointment historically, and continues to be an important factor in electoral democracies.<sup>3</sup> The perhaps most well-known example is the American spoils system of the 19<sup>th</sup> century, in which the party in power could distribute public jobs freely to political supporters, which obviously impairs meritocracy in recruitment, as “parties quite naturally give decisive weight not to expert considerations but to the services a follower renders to the party boss.” (Weber 1968:961).<sup>4</sup>

In a report to the British parliament about the organization of the Civil Service, Stafford Northcote and Charles Trevelyan claimed that “numerous instances might be given in which personal or polit-

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<sup>1</sup> A similar argument has been put forward by Allen Schick (1998), who argues that most developing countries not should try New Zealand's management reforms as their economies are too informal to cope with the high levels of flexibility and discretion.

<sup>2</sup> The imperial exams, held from the 7<sup>th</sup> century and onwards, have even been argued to have influenced civil service reformers in the western world (Zeng 1999).

<sup>3</sup> The origins of the term can be traced to ancient Rome, where plebeians were allowed to choose a patron from among the patricians. The patrician was obliged to take care of the plebeian, for instance by providing money in need or representing him in court. In return, the plebeian was required to for instance contribute to the patrician's daughter's dowry, to ransom the patrician if taken hostage, and support the patrician politically (Roniger 1984).

<sup>4</sup> A striking example of how this system lead to the recruitment of incompetent persons can be found in a report to the United States Congress in 1868, that found that the employees of the US Treasuries Office not only included former accountants, lawyers and bankers, but also a housekeeper, a sculptor and a washerwoman, to name a few examples (Hoogenboom 1959).

ical considerations have led to the appointment of men of very slender ability, and perhaps of questionable character, to situations of considerable emolument, over the heads of public servants of long standing and undoubted merit.” (Northcote and Trevelyan 1854:7) Patronage of this kind was the primary target of the 19<sup>th</sup> century civil service reformers in Great Britain and the United States. In Britain reform was initiated by the aforementioned Northcote-Trevelyan Report in 1854 and in the United States after the assassination of President James Garfield by a disappointed jobseeker in 1881. Both in Britain and the United States, the response to the widespread patronage was to introduce formal, competitive examinations for entry into the civil service, in the US after the Pendleton Act of 1883 and in Britain after the founding of the Civil Service Commission in 1855.

How then, do formal competitive examinations work in practice? In some cases, they include a written test designed to test the abilities of the applicants, in general (for instance arithmetic or language) or for the specific position (technical skills). According to a report of the US Merit Systems Protections Board in 1999, 40 percent of the competitive hires, which account for about 60 percent of all hires, was made on the basis of written tests, mostly for lower level positions (U.S. Merit Systems Protections Board 1999). In other cases, the competitive examination consists of a formalized scoring of the candidate’s experience and training, which can be automated or manual. The common denominator is that the candidates are ranked according to their score on the examination, and the highest ranked are usually employed. In the U.S., the recruiters can often only choose between the three highest scoring candidates. In an alternative procedure, the examinations only measure whether the candidate pass a certain threshold, and recruiters can then choose among the candidates who passed the threshold (Lewis 2008). Interviews can also be included as a component in the competitive examination process.

The defining feature of the system of formal examination is that it lowers the discretion available for recruiters. In the extreme, recruiting is centralized. On Northcote and Trevelyan’s recommendation, a Central Board of Examiners was for example instituted in Britain to remove hiring decisions from the managers, as “a large proportion of the persons appointed to a public department usually consists of young men in whose success the heads of the office or the principal clerks take a lively personal interest, owing to relationship or some other motive connected with their public or private position” (Northcote and Trevelyan 1854).

Two objections can however be raised to a formalized recruitment: that it is unable to sort out the most able candidates, and that it is too rigid and inflexible. An example of the first problem can be taken from the tests to the British Indian Civil Service in the 19<sup>th</sup> century. Originally, civil servants were exclusively recruited from graduates of the Haileybury College. Admission to the college required nomination, which required the patronage of the Directors of the East India Company (Moore 1964). To end this, parliament decided that recruitment should take place through open competitive and formal examination. In the first years of the competitive exam most of the successful test-takers held a degree from Oxford or Cambridge, which was the intended effect of the test. But in the following years, the share of Oxbridge applicants fell markedly. The reason was that the academic institutions provided specialized educations – classics in Oxford and mathematics in Cambridge – while the exams required shallower knowledge on a wider range of subjects. Training specifically tailored to the exams was instead provided by “crammers”, private tutors where students during a short period of time tried to cram in factual knowledge (Dewey 1973). Instead of attracting the best and the brightest, the civil service exams during this period attracted young men without a university education, but with a propensity for cramming. Only after several decades of tinkering with the test structure was the desired traits of the applicants obtained (Dewey 1974).

An indication that formal examinations not were optimal in sorting out the best applicants also in the US can be found in the *New International Encyclopedia* of 1905 which under the “merit system” heading states that “A common objection to the merit system is that it does not give an adequate test of a man's real capacity to administer the office to which he seeks appointment.” (The New International Encyclopedia 1905). Similar tendencies are also evident in the modern world where written examinations are required for entry into the civil service, such as India, where entire towns dedicated to cramming for tests to the civil service or top schools have sprung up (Sullivan 2010).

The second problem is that formal competitive examinations may reduce discretion in recruitment to the point of extreme rigidity. In the United States from the 1960's and 1970's, public opinion as well as scholars started to see the public bureaucracy as rigid and ineffective. A survey in 1978 found that only 18 percent thought that the civil service attracted the most able persons, and only a



tenth thought that the bureaucracy was free of corruption (Lewis 2008: 44). Federal agencies in the US have now long asked for more flexibility in hiring, promoting and firing personnel to improve performance, to “respond more quickly to changes in the job market, agency personnel needs, and new programmatic responsibilities” (Lewis 2008: 25) and the evidence shows that the same trend is evident also in state and local governments (Hamilton 2010). President Obama in 2010 also launched a Hiring Reform aimed at simplifying the Federal hiring process, arguing that “the complexity and inefficiency of today’s Federal hiring process deters many highly qualified individuals from seeking and obtaining jobs in the Federal Government” (Obama 2010). Proposed reforms include eliminating essay-style questions in applications as well as a greater involvement of managers in the hiring process, but the perhaps most telling suggestion is that selection should be allowed not only from the three applicants with the highest rank on the competitive exam, but from applicants in a wider category. This clearly signals a low trust in the ability of the formal examinations to sort out the most able candidates.

Similar patterns are observable all over the world in the form of the New Public Management paradigm, which emphasizes the value of private sector practices in management of public bureaucracies, including greater flexibility and decentralization of hiring practices, under the slogan “Let the managers manage” (cf. Osborne and Gaebler 1992). For instance, executive search (commonly known as “headhunting”) of candidates for top positions in corporations entails extreme discretion for recruiters, as they are not constrained in any way, and even can pursue candidates that have not even applied for the job in question.

If high discretion and flexibility in recruitment work in the private sector, why should it not in the public sector? I argue that the major difference between the public and private sector is that of ownership. Private companies are owned by the stock holders, represented through the board of directors. They delegate the daily operation of the company to the CEO, but hold the CEO accountable for the performance of the company. If the CEO would use the high discretion in recruitment to appoint incompetent friends or relatives to important positions, this would hurt the performance and lead to lower profits, and the board would hold the CEO accountable. In public bureaucracies, performance is not as easily measured (as is evident from the vast literature on contracting out of public services; c.f. Brown and Potoski 2003a; 2003b), and the accountability mech-

anisms are less direct. The most important safeguard against abuse of the high discretion is thus not present in the public sector.

I argue that the choice of level of discretion in recruitment must be guided by an assessment of the risk of patronage and nepotism if high discretion is allowed. The risk logically depends on the incentives to engage in patronage, as well as the available safeguards against it. If the risk is low, flexible hiring practices can be risked to pick up the best talent. If the risk instead is high, it is more important to guard against patronage by lowering discretion. Depending on the circumstances, different institutions can thus lead to more or less meritocracy in recruitment. The trade-off is summarized neatly in the entry for “merit system” in *The New International Encyclopedia* of 1905: “...the system must be recognized as a power for good. Though it does not inevitably lead to the choice of the most competent, it does very effectually exclude the absolutely unfit — the political trickster and dealer in votes.” In the empirical section, I test the hypothesis that formal examinations increase meritocracy in recruitment more when other safeguards against patronage are lacking, but not so when those safeguards are in place.

## **Factors increasing the risk for patronage**

Factors that increase the risk that patronage can be sorted under two headings – incentives for patronage, and those that deter from doing so by increasing the risk that corrupt practices will be exposed and sanctioned.

### **Incentives for using and not using patronage**

Why is patronage used? The classical understanding is that patronage jobs are dispensed in return for political favors, as suggested by Weber (1968). The many examples of political machines in US Cities, as well as a statistical analysis of the incumbency advantage in elections to state legislatures before and after civil service reform (Folke, Hirano and Snyder 2011) indicate that patronage indeed can be an effective tool to win elections, which makes it attractive for incumbent governments. However, Barbara Geddes (1991) has theorized that as political competition increases and

there is a risk that the incumbents need share the spoils of patronage with other, a system of patronage becomes increasingly unattractive. In Geddes model, there is a cost of supporting patronage when the public is opposed to it. The opposition can however in some cases reap the benefits of patronage while still opposing it publicly. In this situation, the incumbent has an incentive to reform, according to Geddes. A similar hypothesis is put forth by Anirudh Ruhil and Pedro Camoes, who also find that merit systems in US state governments to a larger extent were adopted by governors facing stiffer electoral competition (Ruhil and Camoes 2003). A high degree of political competition should thus be associated with a lower risk for patronage.

Other scholars have challenged the electoral effectiveness of patronage. In a survey of highway workers who received their jobs through patronage in Pennsylvania, Frank Sorauf (1956) found that while the workers had contributed minor sums to the party in power, they did little campaign work and did not vote loyally. Indeed, some of them were actually unaware that their position was “political”. In a study of patronage in New Haven, Connecticut, Michael Johnston (1979) argued that jobs were a blunt tool for gathering political support, as they neither are easily divisible nor retractable. Furthermore, since the number of available patronage jobs often is small, they need to be distributed effectively to districts where electoral competition is thought to have the best effect. Calculating which those districts are, often many months in advance of the election, is difficult. Johnston accordingly found that the distribution of patronage jobs not did correspond to what could be expected from a vote-maximizing political calculus. Instead Johnston argued that the patronage jobs in this case were distributed to rally support from a specific ethnic group, Italian-Americans. Patronage structured along ethnic lines can also be found in other parts of the world, such as in the ethnically organized parties of India (Chandra 2007). A high degree of ethnic fractionalization in a country should thus be expected to lead to a higher risk for patronage.

A third factor relating to the incentives for using patronage concerns the alternative cost of patronage. James Hollyer (2011) argues that one of the major costs of patronage is that it excludes competent persons from positions in the bureaucracy, which impairs efficiency. The political benefit of employing a person through patronage must hence be weighed against the efficiency loss stemming from not giving the most qualified person the job. However, if few good candidates are available, for instance when the average level of education among candidates is low, this alternative cost is

also low, which makes patronage more attractive. Hollyer studies the timing of reforms toward meritocratic recruitment in Europe in the 19<sup>th</sup> and 20<sup>th</sup> centuries, and find that they become more likely after education had become more widespread. A low average level of education in a country should thus be associated with more patronage.

### **Risk for exposure and sanction**

Proponents of more at-will recruitment and laxer procedures in hiring have argued that patronage in most cases is outlawed, and thus not a grave risk (Hamilton 2010). But in order for a law to have effect, crimes need to be discovered, exposed and sanctioned. We should hence expect that the risk for patronage is highest when institutions that facilitate the exposure and sanction of abuse are lacking, of which I will include two.

First, media plays an important part in the exposure of abuse in the public bureaucracy, and is more often than not responsible for the exposure of corruption scandals, epitomized by the Watergate scandal, where two journalists brought down a US president. If recruiters know that there is a risk that patronage will be exposed by the media, they are more likely to refrain from it. However, this will not happen if media is controlled by the state. A free and independent media is therefore likely to reduce the risk for patronage. Second, exposing infractions is however not enough. There needs to be an enforcer that can punish the infractions as well, namely an efficient and independent judiciary system. When political pressure routinely is put on the judiciary, patronage (at least at higher levels of government) can be practiced with less risk. An independent judiciary should thus reduce the risk for patronage.

There are of course other factors that could affect the risk for patronage, for instance the degree of corruption in the public administration, but the factors chosen here are chosen to minimize the risk of endogeneity in the statistical model, which will model meritocracy as an outcome of the extent to which formal examinations are used, conditioned by the risk for patronage. For instance, as meritocracy is expected to reduce corruption (Dahlström, Lapuente and Teorell 2012; Rauch and Evans 2001), using it as an interaction variable with formal examinations would introduce endogeneity.

Furthermore, the existence of patronage is probably included in many measures of corruption that build on expert ratings of countries.<sup>5</sup> Of the variables used in the paper, the variable that is most vulnerable to this critique is the indicator for independence of the judiciary, as strategic appointments of loyal supporters in key positions can be a powerful way of controlling the judicial system. However, the other variables are clearly not affected in the same way (most obviously when it comes to ethnic fractionalization). If the main results are similar regardless of the choice of conditioning factor, there is less reason to suspect that results are distorted by endogeneity.

In sum, I have in the theoretical section argued that there are two threats to meritocracy in recruitment of public personnel: political influence in recruitment, and inefficiency in finding good candidates. The choice of bureaucratic recruitment procedures is a trade-off between insulation against patronage and flexibility in finding the most suitable candidates. For instance, drawing lots among candidates will ensure that political influence on the process will become void, but such an arrangement also entails the risk that utterly incompetent persons will be appointed. A more realistic arrangement is a formal examination system, either through written tests or other impersonal evaluation of candidates, which can act as a safeguard against patronage, but also lead to less flexibility. Whether formal examination systems actually will have the effect of increasing meritocracy in recruitment thus depends on whether the risk for patronage is high or low. If the risk is high, a formalized recruitment process with little discretion for recruiters will likely lead to increased meritocracy in recruitment outcomes, as political influence is decreased. However, if the risk for patronage is low, formalizing recruitment will likely only have the effect of leading to more rigidity and administrative burden without a gain in meritocracy.

## **Empirical strategy and data**

To test the hypothesis time series data on countries before and after reforms of recruitment procedures would be optimal. Comparative data on bureaucratic structure is however extremely scarce, with the only two existing (to the best of my knowledge) data sources being cross-sectional datasets

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<sup>5</sup> Still, an analysis using corruption as an interaction variable yields the same results as the other analyses presented in this paper. Formal examinations only have a positive impact on meritocracy in recruitment in corrupt countries, as expected from theory.

collected by Evans and Rauch (1999) and by the Quality of Government Institute (Dahlström, Lapuente and Teorell 2011). The Evans and Rauch data has received the most attention (the QoG data being much more recent) but covers a much smaller sample, only including developing countries. The Evans and Rauch data does moreover not include a variable for meritocracy in the outcome of the recruitment process, which is the main focus of this paper. I will therefore use the QoG data.<sup>6</sup> The approach in the QoG survey is similar to that used by Evans and Rauch, namely to ask country experts to give their opinion of the bureaucratic structure in the country of interest. 106 countries are covered in the dataset, with a mean of 7.7 respondents for each country.<sup>7</sup> Only countries with three or more respondents are included in the sample.

The dependent variable is the degree of meritocracy in recruitment, measured as the country average of the answer to a question where the respondents are asked to evaluate how often the following statement applies: "When recruiting public sector employees, the skills and merits of the applicants decide who gets the job?". Respondents answered on a seven-point scale, ranging from "Hardly ever" to "Almost always". The question thus captures the level of meritocracy in recruitment, regardless of the procedures used. To further test the robustness of the results, an alternative survey question will also be used: "When recruiting public sector employees, the political connections of the applicants decide who gets the job?". The variables are obviously related, but are slightly different. Meritocracy in recruitment consists both of the absence of undue influence over the recruitment process, but also of the presence of mechanisms which find the best candidates. The first question captures both, but the second question only measures the first part, about undue influence. The main independent variable is measured by another item in the same battery, worded "Public sector employees are hired via a formal examination system?".<sup>8</sup>

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<sup>6</sup> The data is publicly available at [www.qog.pol.gu.se/data/qogexpertsurveydataset](http://www.qog.pol.gu.se/data/qogexpertsurveydataset).

<sup>7</sup> However, due to missing data on control and interaction variables, the regression models at most include 98 and at the least 92 countries.

<sup>8</sup> When measuring the degree to which formal examinations are used, Evans and Rauch instead asked respondents about the proportion of higher officials that entered the civil service via formal examination systems. Four response options were available: "Less than 30%", "30 – 60%", "60% - 90%" and "More than 90%". There is thus a difference both in the wording of the question and in the content, as the QoG survey asks about all public employees, and Evans and Rauch only about higher officials. The two measures are however highly correlated ( $R=0.81$ ,  $p<.000$ ).

The hypothesis states that the positive effect of formal examinations (low discretion in recruitment) is conditional on the risk for patronage in the administration: low discretion is preferred when the risk is high, as high discretion can be abused for reasons of patronage. When the risk for patronage is low, high discretion is instead preferred to allow recruiters to pick the best candidates. The appropriate model is thus a multiplicative one, where formal examinations are interacted with the level of risk. Five factors affecting the level of risk were outlined in the theoretical section, three relating to the incentives for patronage, and two relating to the risk of exposure and sanction of patronage: political competition, ethnic fractionalization, average education levels, freedom of the media, and independence of the judiciary. I will now review the empirical indicators used to operationalize the theoretical variables.

Political competition is often measured in terms of closeness of electoral results, but on a global scale a more relevant question is whether different parties actually compete at all. Therefore, the Polity “Competitiveness of participation” index is used (Marshall and Jaggers 2002). The index measures the degree to which opposition to the government is allowed and practiced, from “Repressed” where no opposition is allowed, to “Competitive” where different groups compete for power and regularly transfer it between them. Ethnic fractionalization is measured in the standard way, as the probability that two randomly selected people from a given country not will belong to the same ethnic group (Alesina *et al* 2003). The average education level is measured as the percentage students enrolled in tertiary education in the five-year age group following the end of secondary school, averaged between men and women (UNESCO 2010).

Freedom of the media is in the model measured through the Freedom House indicator “Political pressures and controls on media content”, which builds on expert judgements on the degree of government manipulation of media, censorship, access to information, and more. Independence of the judiciary enters the model as a variable from the Political Constraints Index (Henisz 2000; 2002), that combines information from the Polity Executive constraints index and the International Country Risk Guide index of law and order.

Several of these variables are indexes, which creates some ambiguity about what actually is being measured, and what the causal processes behind correlations are. I have however tried to use the most narrowly defined variables available, using for instance only “independence of the judiciary” instead of composite indexes of rule of law, which is the best strategy given data limitations.

There is a possibility that both recruitment processes and recruitment outcomes (the degree of meritocracy in recruitment) is caused by the existence of good government institutions in general. It is therefore necessary to control for variables known to affect the quality of institutions in general. Three variables are chosen. The first is economic development, which theoretically through modernization is expected to lead to a demand for better institutions, and which also have been shown empirically to correlate strongly with good institutions (Treisman 2007). The second is a dummy variable for whether the country has a legal tradition of common law, which is expected to lead to a more flexible legal framework, and could thus be expected to correlate both with good institutions and recruitment procedures (La Porta et al 1999). The third variable is the Polity Executive Constraints index (Marshall and Jaggers 2002), which captures the effect of democracy. The variable is chosen instead of more comprehensive democracy indexes to increase clarity about what is being measured. All variables except the main dependent and independent variables are obtained from the Quality of Government Dataset (Teorell et al 2011).

In the models presented below, each interacting variable is introduced separately in the model, which does not allow me to draw conclusions about which variables that are more important, given that they probably are correlated. Including them all in the same model will however not allow certain conclusions to be drawn as many terms will be highly collinear. Furthermore, it is not my objective to identify one or two specific factors that moderate the impact of formal examinations. Good institutions tend to cluster together (Besley and Persson 2011), and the aim of the model is to illustrate that in countries where several factors serve to reduce the risk of patronage, formal examinations are less effective in creating meritocracy in recruitment than in countries where the risk is higher. The five variables discussed here all have significant correlations. To this end, an index of the factors affecting the risk for patronage is constructed, by normalizing all five variables to range from 0 (lowest observed value) to 1 (highest observed value) and then adding them. The

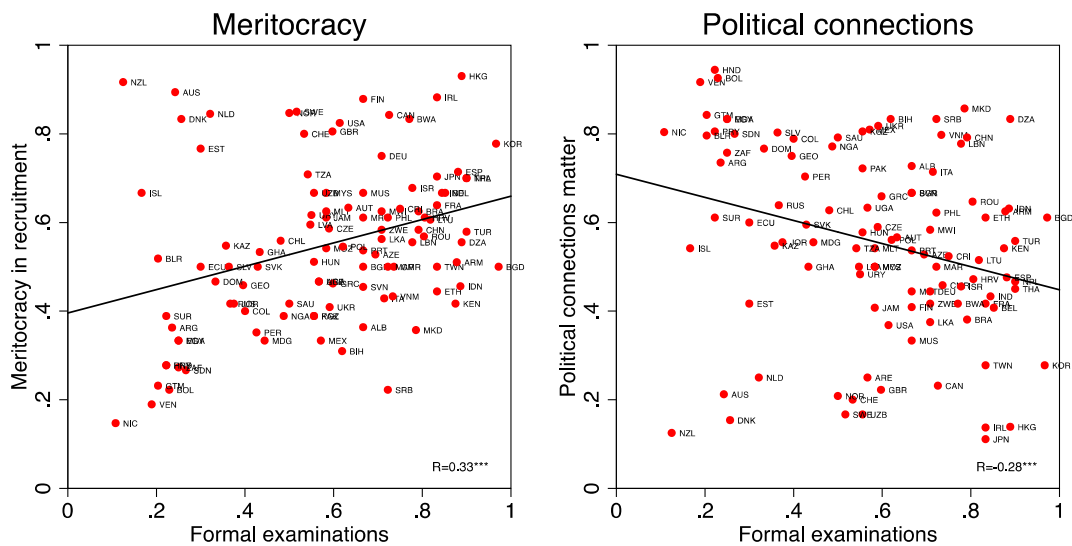


resulting index thus ranges from 0 to 5, where a higher value indicates a higher risk for patronage. Summary statistics for all the variables are presented in Appendix Table 1.

## Results

First, I briefly explore the bivariate relationship between the degree to which formal examination procedures are used in recruitment in the public sector and the degree of meritocracy in recruitment, that is, the extent to which ability determines who gets a job. In Figure 1, the relationship between formal examinations and meritocracy in recruitment (left graph) and the extent to which political connections determine who gets a job (right graph) is presented.

FIGURE 1. SCATTERPLOTS OF THE RELATION BETWEEN FORMAL EXAMINATIONS AND MERITOCRACY IN RECRUITMENT AND THE DEGREE TO WHICH POLITICAL CONNECTIONS MATTER IN RECRUITMENT.



The correlation between formal examinations and the degree of meritocracy in recruitment is as expected positive and statistically significant, but not very strong ( $R=0.33$ ). Similarly, the correlation with the extent to which political connections matter is negative ( $R=-0.28$ ) and significant.

I now proceed to test whether the effect of formal examination systems is conditioned on the factors relating to the incentives for patronage, and the safeguards against it. The hypothesis is that when the risk for patronage is high, formal examinations have the most beneficial effect. In Table 1, the results of the analysis are presented in six models – first without any conditioning factors, and then with one interaction variable at a time, to avoid problems of multicollinearity, and finally with the risk index.

Model 1 shows that the positive effect of formal examinations evident in Figure 1 holds while controlling for the constraints on the executive, economic development and the common law tradition. Economic development is as expected positively correlated with meritocracy in recruitment, as is common law. There is however no statistically significant correlation between constraints on the executive and meritocracy in recruitment.

The hypothesis is tested in Models 2-6 through the size, sign and statistical significance of the interaction terms. All terms are significant at conventional levels of significance, and have the expected sign, except for political competition. Formal examinations have a more positive effect on meritocracy in countries with little political competition, high degrees of ethnic fractionalization, lower average education levels, in countries that do not have an independent judiciary and in countries where political pressure on media is higher. That is, countries where the risk for patronage is expected to be higher. The highest t-value for the interaction term is found when using the combined index of all the other factors as the interaction variable, possibly indicating that it not only is one single factor, but a combination that increases or decreases the risk for patronage.

TABLE 1. ESTIMATION RESULTS. DEPENDENT VARIABLE: MERITOCRACY IN RECRUITMENT. OLS ESTIMATION, UNSTANDARDIZED COEFFICIENTS, T-STATISTICS IN PARENTHESES.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Formal examination</b>	0.240***	0.851***	0.018	0.520***	0.380***	-0.036	-0.208*
	(3.91)	(3.68)	(0.15)	(4.86)	(4.54)	(-0.33)	(-1.79)
<b>Executive Constraints</b>	-0.002	-0.024**	-0.001	-0.003	-0.006	-0.031***	-0.022**
	(-0.28)	(-2.05)	(-0.11)	(-0.32)	(-0.76)	(-3.21)	(-2.39)
<b>Ln(GDP/cap)</b>	0.092***	0.082***	0.081***	0.064***	0.082***	0.066***	0.047**
	(6.06)	(5.38)	(4.57)	(3.10)	(5.48)	(4.37)	(2.51)
<b>Common law</b>	0.105***	0.101***	0.111***	0.115***	0.099***	0.086***	0.111***
	(3.41)	(3.45)	(3.47)	(3.85)	(3.44)	(3.17)	(3.94)
<b>Competitiveness of Participation</b>		0.150***					
		(3.72)					
<b>Formal examination × Competitiveness</b>		-0.171***					
		(-2.84)					
<b>Ethnic fractionalization</b>			-0.388**				
			(-2.22)				
<b>Formal examination × Ethnic fractionalization</b>			0.549**				
			(2.07)				
<b>Average education</b>				0.007***			
				(3.84)			
<b>Formal examination × Average education</b>				-0.008***			
				(-3.16)			
<b>Independent Judiciary</b>					0.270***		
					(3.73)		
<b>Formal examination × Independent judiciary</b>					-0.338***		
					(-2.87)		
<b>Political influence on media</b>						-0.018***	
						(-5.16)	

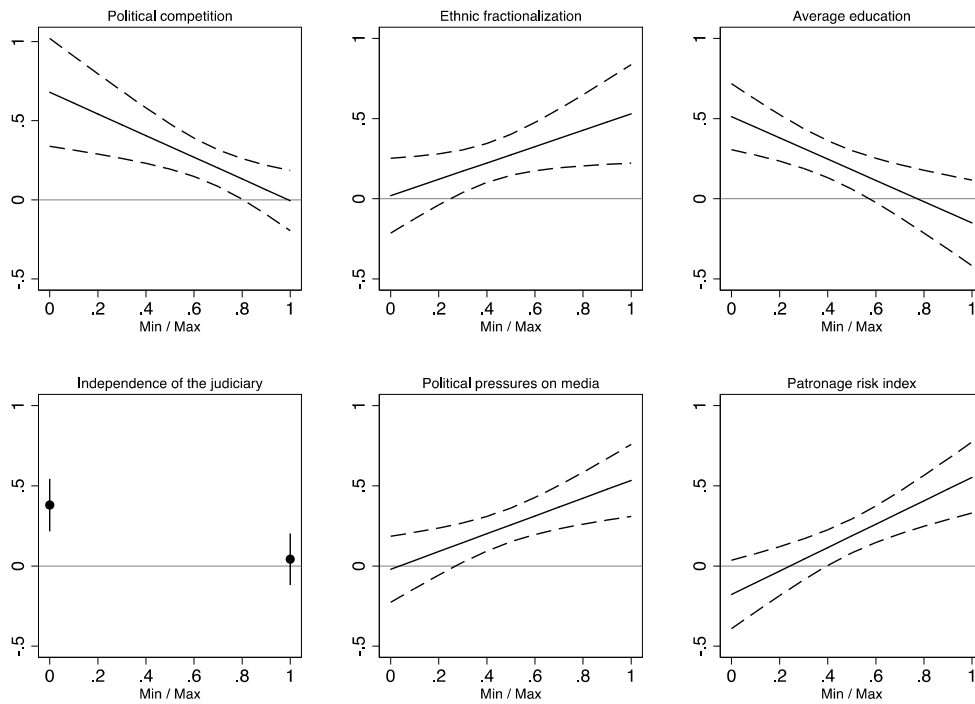
<b>Formal examination × Political influence on media</b>						0.016*** (2.89)	
<b>Risk index</b>							-0.177*** (-5.58)
<b>Formal examination × Risk index</b>							0.172*** (3.76)
<b>Constant</b>	-0.406*** (-3.44)	-0.741*** (-4.18)	-0.168 (-0.94)	-0.402** (-2.55)	-0.411*** (-3.24)	0.288* (1.73)	0.529*** (2.39)
<b>R<sup>2</sup></b>	0.456	0.527	0.483	0.558	0.535	0.596	0.622
<b>N</b>	98	97	97	94	98	98	92

\*\*\*  $p < 0.01$  \*\*  $p < 0.05$  \*  $p < 0.1$

My interpretation of the results is thus that formal examinations with strict regulations of recruitment are necessary to counter patronage in countries where the risk for patronage is high, while it is less so elsewhere. In Figure 2, the marginal effect of formal examinations is presented at different values of the interaction variables, from the minimal observed value to the maximal observed value. The dashed lines denote the 95 percent confidence interval.

Since both the independent variable and the dependent variable have been normalized to range from 0 to 1, the effect presented indicates the difference between countries where formal examinations “Hardly ever” are used and countries where they “Almost always” are used. The strength of the interaction effects are substantial. For instance, when political competition is at its lowest, the effect of formal examinations exceeds 0.5, while it is 0 at the highest level of political competition. The interaction effect of ethnic fractionalization is similar – from no effect at the lowest observed level of ethnic fractionalization to 0.5 at the highest level. It should however be noted that the effect of formal examinations never is negative and statistically significant, as both confidence intervals never pass below zero. Formal examinations thus seem to be effective in many countries, and simply superfluous in some countries, but never harmful for meritocracy in recruitment, according to the models.

FIGURE 2. MARGINAL EFFECT OF FORMAL EXAMINATIONS ON MERITOCRACY IN RECRUITMENT AT DIFFERENT VALUES OF THE INTERACTION VARIABLES, FROM MINIMAL OBSERVED VALUE TO MAXIMAL OBSERVED VALUE.

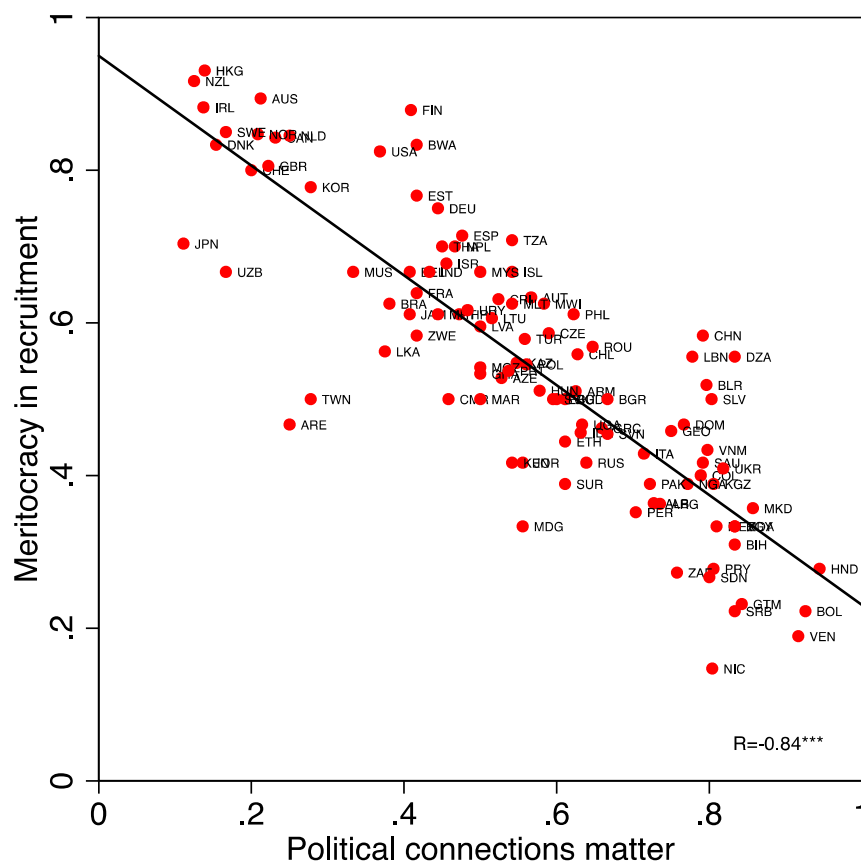


I now turn to an analysis in which the survey indicator of whether political connections matter in recruitment instead of meritocracy in recruitment as the dependent variable. Results are bound to be fairly similar, as the two variables naturally are highly negatively correlated ( $R=-0.84$ ). Still, there are some differences between the two concepts, as other factors than the influence of political connections can impair meritocracy, for instance ethnic discrimination. The relationship between the two variables is presented in Figure 3.

To illustrate that political influence in the recruitment process not is perfectly negatively correlated with meritocracy in recruitment, I will briefly discuss two examples. The country where political connections is deemed to have the least influence is Japan, but the meritocracy in recruitment to the Japanese public sector estimated at a level comparable to that of Spain or India, where political connections are much more important. One possible explanation could be the alleged dominance

of the Law Department of Tokyo University among elite bureaucrats and politicians – a large share of Japanese prime ministers have been graduates, and Setsuo Miyazawa and Hiroshi Otsuka (2000: 15) show that Tokyo law graduates that pass the entrance exams are more than twice as likely to actually become employed: “In fact, Tokyo graduates can work in an environment, which is almost an alumni organization of the University of Tokyo and can feel more confidence in their future, whereas those from other universities are constantly reminded that they are minorities and do not have the same supporting networks among elite bureaucrats.” In the Japanese case, it seems that it is bureaucratic connections rather than political connections that matter.

FIGURE 3. SCATTERPLOT OF THE RELATION BETWEEN MERITOCRACY IN RECRUITMENT AND THE DEGREE TO WHICH POLITICAL CONNECTIONS MATTER IN RECRUITMENT.



An interesting opposite case is China, which is found to the right in the graph. In China, political connections are by the country experts considered very important, unsurprisingly, given the intertwinement of the Communist Party and the state. More surprising is the fact that the system despite that has achieved a respectable level of meritocracy in recruitment, which almost is on par with Japan's. It appears as if the Communist Party is successful in finding and cultivating talent, illustrating what Peter Evans (1998:71) has claimed: "meritocratic recruitment can be achieved through a variety of means."

In Table 2 an analysis identical to the one presented in Table 1 is presented, using the other dependent variable. The main results hold, but the coefficients have opposite signs from Table 1 – formal examinations lead to less importance of political connections when there is less political competition, more ethnic fractionalization, less average education, no independent judiciary and more political pressures on the media. One interesting difference is however that the interaction term for ethnic fractionalization is rendered insignificant (even though the point estimate not is radically diminished), which makes sense given that ethnic fractionalization is related to patronage on ethnical grounds, not political.

TABLE 2. ESTIMATION RESULTS. DEPENDENT VARIABLE: POLITICAL CONNECTIONS.  
OLS ESTIMATION, UNSTANDARDIZED COEFFICIENTS, T-STATISTICS IN  
PARENTHESES.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Formal examination</b>	-0.217***	-0.790***	-0.051	-0.428***	-0.409***	0.058	0.232
	(-2.80)	(-2.65)	(-0.33)	(-2.91)	(-3.78)	(0.40)	(1.41)
<b>Executive Constraints</b>	0.003	0.029*	0.002	0.002	0.005	0.034***	0.018
	(0.28)	(1.91)	(0.22)	(0.21)	(0.50)	(2.66)	(1.34)
<b>Ln(GDP/cap)</b>	-0.098***	-0.084***	-0.104***	-0.092***	-0.092***	-0.070***	-0.66**
	(-5.14)	(-4.29)	(-4.57)	(-3.24)	(-4.77)	(-3.48)	(-2.46)
<b>Common law</b>	-0.136***	-0.135***	-0.131***	-0.136***	-0.128***	-0.117***	-0.140***
	(-3.50)	(-3.56)	(-3.19)	(-3.31)	(-3.44)	(-3.24)	(-3.48)
<b>Competitiveness of Participation</b>		-0.157*** (-3.02)					
<b>Formal examination x Competitiveness</b>		-0.163** (-2.10)					
<b>Ethnic fractionalization</b>			0.201				
			(0.90)				
<b>Formal examination x Ethnic fractionalization</b>			-0.420 (-1.24)				
<b>Average education</b>				-0.004*			
				(-1.84)			

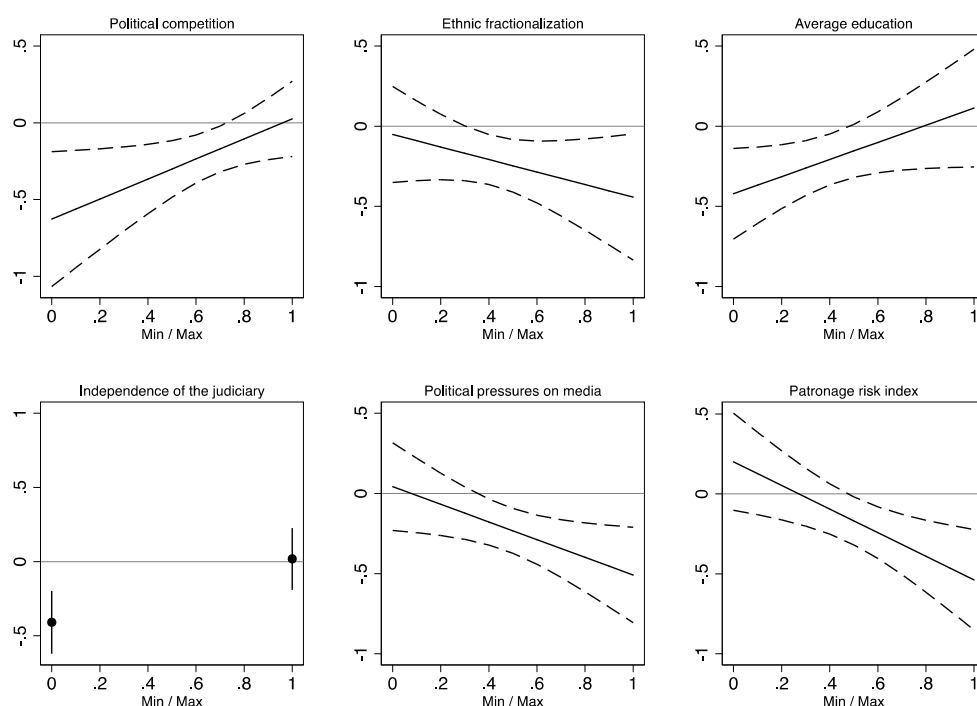


Formal examination × Average education				0.006* (1.85)			
Independent Judiciary					-0.303***		
					(-3.23)		
Formal examination × Independent judiciary					-0.427*** (2.81)		
Political influence on media						0.019***	
						(4.05)	
Formal examination × Political influence on media						-0.016** (-2.16)	
Risk index							0.160*** (3.55)
Formal examination × Risk index							-0.174*** (-2.68)
Constant	1.562***	1.857***	1.539***	1.659***	1.626***	0.817***	0.801***
	(10.46)	(8.13)	(6.73)	(7.64)	(9.91)	(3.70)	(2.55)
R <sup>2</sup>	0.373	0.433	0.389	0.408	0.438	0.487	0.463
N	98	97	97	94	98	98	92

\*\*\*  $p < 0.01$  \*\*  $p < 0.05$  \*  $p < 0.1$

Figure 4 presents the marginal effects of formal examinations at different levels of the interaction variables, as in Figure 2. The slopes are reversed compared to Figure 2, but are otherwise similar. Formal examinations have a statistically significant effect in all countries but the ones with the best safeguards against patronage, where it has an effect indistinguishable from zero.

**FIGURE 4. MARGINAL EFFECT OF FORMAL EXAMINATIONS ON THE DEGREE TO WHICH POLITICAL CONNECTIONS MATTER IN RECRUITMENT AT DIFFERENT VALUES OF THE INTERACTION VARIABLES, FROM MINIMAL OBSERVED VALUE TO MAXIMAL OBSERVED VALUE.**



## Robustness and alternative explanations

One possible objection to the results of the empirical analysis is that both the dependent variables and the independent variables stem from the same expert survey, which possibly could create an artificial correlation between the two variables. An alternative analysis is therefore conducted. In the regular analysis presented above, the average expert score for the country on the dependent

variable is regressed on the average expert score for the country on the independent variable. In the alternative analysis, the unit of analysis is instead individual experts.

The dependent variable is the expert's rating of the dependent variable, but the independent variable is instead of the expert's own rating the average of the other country experts' rating. In this way, the dependent variable and independent variable is disconnected, as for each unit of analysis, different persons have scored the independent and the dependent variable. Results are presented in the Appendix (Tables 2 and 3), and show that all the results are substantively unchanged, which indicates that correlations indeed are driven by the underlying characteristics of the countries, rather than by the characteristics of the country experts.

A more serious objection relates to the degree to which formal examination systems stipulated by the law are used in practice. It is conceivable that some countries have comprehensive systems for competitive examinations, for instance requiring written tests, but that these examinations are circumvented. The infamous "Malek Manual", written by officials during the Nixon administration in USA, detailed strategies for politicizing the bureaucracy without breaking the law (Lewis 2008). Similarly, South Korea in the 1950's had systems for competitive examinations, but the vast majority of new hires were "special appointments" which were exempt from the merit system (Cheng, Haggard and Kang 1998: 105). A risk is then that the country experts in the survey have rated the degree to which formal examination systems actually are used in practice in recruitment, rather than the extent to which they are required by law. This would mean that the distance between the dependent and independent variable becomes very small, as both variables measure de facto meritocracy.

One indication that this alternative explanation not is the entire story is however given by the modest unconditional correlation between the two variables, which is illustrated in Figure 1. As the correlation only appears in subgroups of countries, it would appear that the two variables not simply measure the same underlying concept. Moreover, it is unfortunately impossible to adress this problem given the data currently at hand. A task for future research is to collect objective data on whether laws for formal examinations are in place, and study to which extent these laws correlate

with the extent to which formal examinations actually are used, and with the degree of meritocracy in recruitment.

## Conclusion

The structure and quality of the bureaucracy is paramount in the quest for less corruption and better governance. To this end, meritocratic recruitment of public officials has been put forth as an important step. However, it is far from certain that institutions traditionally associated with meritocratic recruitment, most importantly formal examinations, actually lead to a high level of meritocracy. In many cases, formal examinations lead to cultures of cramming for written tests, and lack of flexibility in the light of new challenges. This has led to calls for adoption of recruitment practices traditionally associated with the private sector, where more discretion is allowed to recruiters. Such practices are however more easily abused for reasons of patronage and nepotism. It is therefore necessary to investigate under which conditions formal recruitment lead to meritocracy in recruitment.

I have here argued that formal examinations are preferable when there are few other safeguards against patronage, as formal examinations act as a check on patronage and nepotism. When safeguards are in place, the risk that recruitment practices that allow for more discretion will be abused is lower, and more discretion in recruitment can then lead to more flexibility and lower administrative burden. Formal examinations thus appear to be a less riskier strategy than more flexible recruitment – countries that have open recruitment include both the most and the least meritocratic in the world, as the examples of New Zealand and Nicaragua show. With formal recruitment, the worst excesses of patronage are more likely to be avoided, but it is perhaps not in all instances possible to find the most suitable candidates. It should be noted that while the effect of formal examinations in some cases is predicted to be negative, the negative effect is never statistically significant. But even if the effect is zero, the case for using formal examinations would seem weak, as it is a slower and more complicated procedure, whose biggest advantage is improved meritocracy and protection from patronage. If that advantage is non-existent, a less cumbersome system would seem preferable.

The policy implications are thus in line with the literature that criticizes standardized solutions to governance problems in different contexts. Countries plagued by corruption and dysfunctional bureaucracies would not do well by simply emulating the recruitment practices of countries that today are successful, as the context is entirely different (Schick 1998). However, as pointed out by Lant Pritchett and Michael Woolcock, “‘one size fits all’ does not mean that ‘any size fits all’ or ‘anything goes;’ without guidance as to which size fits which, it is merely a platitude.” (Pritchett and Woolcock 2004:193) Research on which bureaucratic structures that prevent corruption and promote development should move towards delimiting the conditions under which different institutions and policies function better or worse. This paper is only a first step – instead of one “size” I discuss two, but future empirical research can further elaborate on the the appropriate ways to recruit public servants in different circumstances. For now, the conclusion is that flexible and more easily administered recruitment practices may be appropriate in countries with several safeguards against patronage and nepotism, that is, countries that resemble New Zealand. However, if the country instead resembles Nicaragua more and those safeguards are lacking, a more rigid system of formal examinations will instead do more to promote meritocracy in recruitment.

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# APPENDIX

APPENDIX TABLE 1. SUMMARY STATISTICS.

	<b>N</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
<b>Meritocracy in recruitment</b>	92	0.55	0.18	0.15	0.92
<b>Political connections in recruitment</b>	92	0.55	0.21	0.11	0.94
<b>Formal examinations</b>	92	0.58	0.22	0.11	0.97
<b>Executive constraints</b>	92	5.52	1.91	1.00	7.00
<b>Ln(GDP/Cap)</b>	92	8.82	1.04	6.36	10.51
<b>Common law</b>	92	0.25	0.44	0.00	1.00
<b>Competitiveness of participation</b>	92	3.75	1.18	1.00	5.00
<b>Ethnic fractionalization</b>	92	0.39	0.23	0.00	0.93
<b>Average education</b>	92	35.36	23.20	1.00	86.00
<b>Independence of the judiciary</b>	92	0.52	0.50	0.00	1.00
<b>Political influence on the media</b>	92	16.05	10.06	1.00	36.00
<b>Risk index</b>	92	2.24	1.25	0.18	4.43

*Comment: Summary statistics are presented for the 92 countries which have complete data on all variables. In the regression models, the maximum number of countries possible are used in each model.*

APPENDIX TABLE 2.

ESTIMATION RESULTS, INDIVIDUAL LEVEL ANALYSIS. DEPENDENT VARIABLE: MERITOCRACY IN RECRUITMENT. OLS ESTIMATION, UNSTANDARDIZED COEFFICIENTS, T-STATISTICS IN PARENTHESES. STANDARD ERRORS CLUSTERED ON COUNTRY.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Formal examination</b>	0.213***	0.933***	-0.073	0.482***	0.368***	-0.076	-0.214**
	(2.89)	(4.08)	(-0.59)	(5.58)	(4.94)	(-0.63)	(-2.27)
<b>Executive Constraints</b>	0.001	-0.029***	0.001	-0.001	0.001	0.001	-0.030***
	(1.14)	(-3.09)	(1.21)	(-1.21)	(0.79)	(0.60)	(-3.14)
<b>Ln(GDP/cap)</b>	0.111***	0.103***	0.088***	0.086***	0.093***	0.085***	0.060**
	(8.60)	(6.11)	(6.47)	(4.30)	(5.29)	(5.45)	(2.50)
<b>Common law</b>	0.136***	0.128***	0.160***	0.147***	0.132***	0.122***	0.146***
	(4.47)	(4.34)	(5.90)	(6.86)	(5.43)	(4.61)	(6.62)
<b>Competitiveness of Participation</b>		0.164*** (3.96)					
<b>Formal examination × Competitiveness</b>		-0.193*** (-3.28)					
<b>Ethnic fractionalization</b>			-0.564*** (-2.94)				
<b>Formal examination × Ethnic fractionalization</b>			0.692** (2.56)				

Average education				0.006***			
				(3.64)			
Formal examination × Average education				-0.007*** (-2.89)			
Independent Judiciary					0.289***		
					(2.66)		
Formal examination × Independent judiciary					-0.359** (-2.55)		
Political influence on media						-0.014***	
						(-3.87)	
Formal examination × Political influence on media						0.017*** (3.21)	
Risk index							-0.179*** (-7.02)
Formal examination × Risk index							0.165*** (4.63)
Constant	-0.605***	-0.961***	-0.171	-0.595***	-0.563***	-0.135	0.465*
	(-5.36)	(-5.14)	(-1.02)	(-3.66)	(-3.62)	(-0.80)	(1.80)
R <sup>2</sup>	0.274	0.306	0.299	0.314	0.314	0.312	0.355
N	981	944	978	939	981	981	906

\*\*\*  $p < 0.01$  \*\*  $p < 0.05$  \*  $p < 0.1$

APPENDIX TABLE 3.

ESTIMATION RESULTS, INDIVIDUAL LEVEL ANALYSIS. DEPENDENT VARIABLE: POLITICAL CONNECTIONS MATTER IN RECRUITMENT. OLS ESTIMATION, UN-STANDARDIZED COEFFICIENTS, T-STATISTICS IN PARENTHESES. STANDARD ERRORS CLUSTERED ON COUNTRY.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Formal examination</b>	-0.198***	-0.962***	0.041	-0.419***	-0.436***	0.134	0.267*
	(-2.63)	(-3.64)	(0.24)	(-4.02)	(-6.39)	(0.95)	(1.80)
<b>Executive Constraints</b>	-0.002***	0.031**	-0.002***	-0.001	-0.002***	-0.002**	0.025*
	(-4.43)	(2.31)	(-4.83)	(-1.19)	(-3.94)	(-2.40)	(1.97)
<b>Ln(GDP/cap)</b>	-0.120***	-0.102***	-0.105***	-0.114***	-0.107***	-0.092***	-0.076***
	(-7.38)	(-5.13)	(-6.86)	(-4.47)	(-6.25)	(-5.19)	(-3.18)
<b>Common law</b>	-0.165***	-0.162***	-0.180***	-0.167***	-0.160***	-0.149***	-0.169***
	(-4.82)	(-4.84)	(-5.38)	(-5.62)	(-5.55)	(-4.76)	(-5.44)
<b>Competitiveness of Participation</b>		-0.181*** (3.56)					
<b>Formal examination × Competitiveness</b>		0.207*** (2.93)					
<b>Ethnic fractionalization</b>			0.445*				
			(1.93)				
<b>Formal examination × Ethnic fractionalization</b>			-0.584 (-1.66)				

Average education				-0.004***			
				(-2.20)			
Formal examination × Average education				0.006* (1.84)			
Independent Judiciary					-0.343***		
					(-4.27)		
Formal examination × Independent judiciary					0.493*** (4.03)		
Political influence on media						0.016***	
						(4.38)	
Formal examination × Political influence on media						-0.019*** (-3.32)	
Risk index							0.179*** (5.33)
Formal examination × Risk index							-0.187*** (-3.36)
Constant	1.801***	2.126***	1.488***	1.900***	1.846***	1.288***	0.826***
	(13.46)	(9.50)	(7.67)	(8.95)	(12.17)	(7.24)	(3.09)
R <sup>2</sup>	0.257	0.277	0.271	0.277	0.298	0.295	0.309
N	976	939	973	934	976	976	901

\*\*\*  $p < 0.01$  \*\*  $p < 0.05$  \*  $p < 0.1$